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Robert A Leydier

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THE JANSSON FIRM

9501 N. CAPITAL OF TX HWY #202

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EXAMINER

ARORA, AJAY

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/807,686	<b>Applicant(s)</b> LEYDIER ET AL.	
	<b>Examiner</b> AJAY K. ARORA	<b>Art Unit</b> 2892	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7,10,12-17 and 19-32 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,5-7,10,12-17 and 19-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |



## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of embodiment 1 of Figures 4A-4C, on which claims 5-7, 12, 13, 21-23, 26-28 and 29 read, in the reply filed on 06/30/2008 is acknowledged. The arguments are persuasive and the restriction requirement is withdrawn.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 recites "wherein said physical means comprises silicon dopants in the face of the silicon substrate layer that is opposite to the active face" (emphasis added). However, claim 21 depends from claim 20 which defines "an additional layer of silicon" that "comprises physical means .....". In other words, the base claim 20 requires the "physical means" to be part of the additional layer of silicon, while claim 21 contradicts claim 20 by reciting that the "physical means" is part of the silicon substrate layer. For the purpose of this rejection, it will be assumed that the "physical means" is as recited in independent claim 20.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 5-7, 14-17, 19-23, 25-28, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orcutt (US 4,712,129), hereinafter Orcutt, in view of Zhang (US 5,886,364), hereinafter Zhang.

Regarding claim 1, Orcutt (refer to Figure 1) teaches a chip (12) that is capable of functioning as a chip-containing portable article, comprising:

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a silicon (Col. 1, lines 50-52) substrate layer (substrate layer of chip 12) having an active face with circuits integrated therein (Col. 2, lines 30-33), and an additional layer (18) of silicon (Col. 3, lines 3-5 and 41-42) that:

is sealed to the active face of the silicon substrate layer by a sealing layer (20), covers at least part of said active face (Col. 2, lines 30-33); and comprises physical means for providing physical protection (Col. 3, lines 1-3).

However, Orcutt does not teach that:

- a). that the integrated circuits define “a central processor unit and memories”; and
- b). that said additional layer of silicon that comprises physical means for protection is such that the physical protection is “against the action of electromagnetic radiation in the infrared range at a wavelength longer than  $1\mu\text{m}$ ”.

Integrated circuits defining memories and associated central processor units are well known in the art. It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt such that Integrated circuits that define a central processor unit and memories are well known in the art. The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of providing the device with a memory circuit functionality that can be controlled by a central processor unit, as is typical of many computing devices.

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Zhang teaches a semiconductor structure comprising a layer of silicon having a phosphorus dopant concentration of about  $10^{20}$  atoms per  $\text{cm}^3$  (Col. 3, lines 31-34), which according to applicant's specification (see page 6, lines 5-24), provides physical protection against the action of electromagnetic radiation in the infrared range at a wavelength longer than  $1\mu\text{m}$ . It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt such that the additional layer (or a part of the substrate) is a layer of silicon with the above described dopant concentration and thus comprises physical means for protection is such that the physical protection is against the action of electromagnetic radiation in the infrared range at a wavelength longer than  $1\mu\text{m}$ . The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of providing protection to certain portions of the chip from incident light of the specific wavelengths that the device is expected to be exposed to.

Regarding claim 5, Orcutt as modified by Zhang above, teaches that the means providing physical protection against the action of electromagnetic radiation are silicon dopants (as explained above for claim 1).

Claims 21 and 26 are similar to claim 1 but also requires that the protection comprises "silicon dopants in the face of the silicon substrate layer that is opposite to the active face". This limitation is very similar to that addressed in the rejection of claim 5.

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Regarding claims 6, 22 and 27, Orcutt as modified by Zhang above, teaches that the concentration of silicon dopants lies in the range  $10^{17}$  to  $10^{20}$  atoms per  $\text{cm}^3$  (Col. 3, lines 31-34).

Regarding claims 7, 23 and 28, Orcutt as modified by Zhang, teaches that the silicon dopant is phosphorus (Col. 3, lines 31-34).

Regarding claims 14, 25 and 30, Orcutt as modified above, teaches substantially the claimed structure but does not teach that the physical means for providing physical protection against the action of electromagnetic radiation are formed by at least “one deposition of metal on the additional layer of silicon” or “on the face of the silicon substrate layer that is opposite to the active face”. Zhang discloses that a laminate of metal and silicon can be used as a light shielding layer (Col. 6, lines 22-26). It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt such that the physical means for providing physical protection against the action of electromagnetic radiation are formed by at least one deposition of metal on the additional layer of silicon, or another shielding location such as on the face of the silicon substrate layer that is opposite to the active face. The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of providing a more effective shield wherein the one deposition of metal provides shielding above and beyond that provided by the additional layer of silicon, while placing the shield at a location where shielding is optimized.



Regarding claims 15 and 31, Orcutt as modified above, teaches substantially the claimed structure but does not teach the claimed metal deposition thickness; i.e. does not teach that the metal deposition has “a thickness greater than 50 Angstroms”. It would have been obvious to one having ordinary skill in the art at the time the inventions was made to modify Orcutt such that the metal deposition has a thickness greater than 50 Angstroms, since it has been held that discovering an optimum value of a result effective variable (the metal thickness in this case, which can be optimized for a specific device requiring shielding from a specific intensity of electromagnetic radiation) involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 16, Orcutt as modified above discloses the metal deposition but does not specifically disclose that the metal deposition is “on the face of the additional layer of silicon that is in contact with the sealing layer”. The metal deposition provides physical protection from incident electromagnetic radiation (as already explained) and would hence be provided on the face of the additional layer of silicon on which the undesirable electromagnetic radiation exposure is expected and is to be fully or partially blocked. It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt to incorporate the metal deposition on the face of the additional layer of silicon that is in contact with the sealing layer. The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of providing the electromagnetic radiation shielding on the surface on which electromagnetic radiation is

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expected to be incident (which can be the face of the additional layer of silicon that is in contact with the sealing layer, if the substrate below the sealing layer is transparent or otherwise admits said electromagnetic radiation).

Regarding claim 17, Orcutt as modified above discloses the metal deposition but does not specifically disclose that the metal deposition is “on the face of the additional layer of silicon that is opposite to the face that is in contact with the sealing layer”. As stated above, the metal deposition provides physical protection from incident electromagnetic radiation and would hence be provided on the face of the additional layer of silicon on which the undesirable electromagnetic radiation exposure is expected and is to be fully or partially blocked. It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt to incorporate the metal deposition on the face of the additional layer of silicon that is opposite to the face that is in contact with the sealing layer. The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of providing the electromagnetic radiation shielding on the surface on which electromagnetic radiation is expected to be incident.

Regarding claims 19 and 32, Orcutt as modified above teaches substantially the claimed structure but does not teach the claimed metal deposition thickness; i.e. does not teach that the metal deposition has “a thickness of about 100 Angstroms”. It would have been obvious to one having ordinary skill in the art at the time the inventions was made to modify Orcutt such that the metal deposition has a thickness of about 100

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Angstroms, since it has been held that discovering an optimum value of a result effective variable (the metal thickness in this case, which can be optimized for a specific device requiring shielding from a specific intensity of electromagnetic radiation) involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 20, Orcutt (refer to Figure 1) teaches a chip (12) that is capable of functioning as a portable article provided with a chip, comprising:

a silicon (Col. 1, lines 50-52) substrate layer (substrate layer of chip 12) having an active face with circuits integrated therein (Col. 2, lines 30-33), and  
an additional layer (18) of silicon (Col. 3, lines 3-5 and 41-42) that:  
is sealed to the active face of the silicon substrate layer by a sealing layer (20),  
covers at least part of said active face (Col. 2, lines 30-33); and  
comprises physical means for providing physical protection (Col. 3, lines 1-3).

However, Orcutt does not teach that:

- a). that the integrated circuits define “a central processor unit and memories”; and
- b). that said additional layer of silicon that comprises physical means for providing protection is such that the physical protection is “against the action of electromagnetic radiation in the infrared range at a wavelength longer than 1 $\mu$ m”.

The above limitations have already been addressed in the rejection of claim 1.

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7. Claims 10, 12, 13, 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orcutt (US 4,712,129), hereinafter Orcutt, in view of Zhang (US 5,886,364), hereinafter Zhang, and further in view of Kobachi et al. (US 5,811,797), hereinafter Kobachi.

Regarding claim 10, Orcutt as modified by Zhang above teaches substantially the claimed structure, but does not teach that the physical means “for providing physical protection against the action of electromagnetic radiation are formed by surface irregularities”. Kobachi (refer to Figure 22) teaches a semiconductor chip package wherein a physical means for providing protection against the action of electromagnetic radiation (Col. 15, lines 3-10) are formed by surface irregularities (345). It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt such that the physical means for providing physical protection against the action of electromagnetic radiation are formed by surface irregularities (in either the substrate layer or the additional layer). The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of using the irregularities to scatter the unwanted incident electromagnetic radiation (Col. 15, lines 3-10) and thus protect the device from the said electromagnetic radiation.

Note that Orcutt does disclose surface irregularities in the face of the additional layer of silicon, but does not disclose that these irregularities are such that they provide physical protection against the action of the claimed electromagnetic radiation.

Claims 24 and 29 are similar to claim 1 but also requires that the physical means comprises "surface irregularities in the face of the silicon substrate layer that is opposite to the active face". This limitation is very similar to that addressed in the rejection of claim 10.

Regarding claim 12, Orcutt as modified above teaches substantially the claimed structure but does not teach that the surface irregularities are provided "in the face of the additional layer of silicon that is in contact with the sealing layer". However, the use of surface irregularities in a light shielding layer to scatter electromagnetic radiation and thus provide physical protection against the action of the electromagnetic radiation is taught by Kobachi (Col. 15, lines 3-10). It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt to incorporate the surface irregularities in shielding layer taught by Kobachi in the shielding layer (i.e. the additional layer of silicon) of Orcutt; such that the surface irregularities are provided in the face of the additional layer of silicon that is in contact with the sealing layer. The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of using the irregularities to scatter the unwanted incident electromagnetic radiation (Col. 15, lines 3-10), by forming irregularities on the surface on which the electromagnetic radiation is expected to be incident (which can be the face of the additional layer of silicon that is in contact with the sealing layer, if the substrate below the sealing layer is transparent or otherwise admits said electromagnetic radiation).

Regarding claim 13, Orcutt as modified above for claim 10 teaches substantially the claimed structure but does not teach that the surface irregularities are provided “in the face of the additional layer of silicon that is opposite to the face that is in contact with the sealing layer”. However, the use of surface irregularities in a shielding layer to scatter electromagnetic radiation and thus provide physical protection against the action of the electromagnetic radiation is taught by Kobachi (Col. 15, lines 3-10). It would have been obvious to one of ordinary skills in the art at the time of the invention to modify Orcutt to incorporate the surface irregularities in shielding layer taught by Kobachi in the shielding layer (i.e. the additional layer of silicon) of Orcutt; such that the surface irregularities are provided on the surface on which the said electromagnetic radiation is expected to be incident; i.e. the surface irregularities are provided in the face of the additional layer of silicon that is opposite to the face that is in contact with the sealing layer. The ordinary artisan would have been motivated to modify Orcutt for at least the purpose of using the irregularities to scatter the unwanted incident electromagnetic radiation (Col. 15, lines 3-10), by forming irregularities on the surface on which electromagnetic radiation is expected to be incident (which can be the face of the additional layer of silicon that is opposite to the face that is in contact with the sealing layer).

***Response to Arguments***

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8. Applicant's arguments of 1/16/2007 with respect to claims 1 and 20, and their dependent claims have been considered but are moot in view of the new ground(s) of rejection.

9. On pages 9-14, applicant presents arguments against the rejection of claim 1 in view of Orcutt and Zhang. More specifically, applicant admits that Zhang teaches a silicon film that works as a light shield and that the silicon film has phosphorus dopant concentration of about  $10^{20}$  atoms per  $\text{cm}^3$  (see page 11, lines 4-11 of applicant's response). However, applicant still feels that Zhang reference is not appropriate because "In Zhang, phosphorus doped silicon acts as a "light shield", but nowhere does Zhang specify the wavelength of light that is shielded" (emphasis added, see page 11, lines 9-11). This argument is not persuasive. Zhang discloses the general concept of shielding a device against electromagnetic radiation (light is a form of electromagnetic radiation) using a layer of silicon having a phosphorus dopant concentration of about  $10^{20}$  atoms per  $\text{cm}^3$  (Col. 3, lines 31-34). Thus, Zhang's structure must be capable of providing physical protection against the action of electromagnetic radiation in the infrared range at a wavelength longer than  $1\mu\text{m}$  (this is an inherent property, as disclosed by applicant's specification page 6, lines 5-24).

10. On page 11, lines 21-26 of applicant's response, applicant alleges that "As further proof, it is notable that the Office Action relies on Applicant's specification for teaching "a layer of silicon having a phosphorus dopant concentration of about  $10^{20}$  atoms per  $\text{cm}^3$  ...provides protection against the action of electromagnetic radiation in

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the infrared ranged at a wavelength longer than 1  $\mu\text{m}$ ". This argument is not persuasive. As explained earlier, the above referenced disclosure in applicant's specification is an inherent property of a layer of silicon having a phosphorus dopant concentration of about  $10^{20}$  atoms per  $\text{cm}^3$ . Thus, the above said property must also be inherently possessed by the structure of Zhang (as Zhang teaches the same structure), whether or not disclosed in applicant's specification.

11. On page 11, applicant appears to allege that Zhang is not a related reference because Zhang deals with "visible light". This argument is not persuasive. Just because Zhang describes visible light related aspects, it does not imply that Zhang's structure is not capable of working with electromagnetic radiation of a different frequency range. As explained earlier, the required protection for the required wavelength is an inherent property of the structure of Zhang (in addition to any other properties that it may possess to block visible light).

12. In response to applicant's argument that Zhang's "shielding action is performed well within the completed structure of the thin film transistor" (see page 12, lines 7-9), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).



13. With reference to the above argument, the applicant also alleges that “Zhang teaches away from Claim 1” (see page 12, lines 3-4 of applicant’s response). The examiner submits that if “shielding action is performed well within the completed structure of the thin film transistor” (see page 12, lines 7-9) does not change the principle of operation of the primary reference or render the reference inoperable for its intended purpose. See MPEP § 2143.01. If a layer can provide shielding internal to a structure, it does not mean the layer will not provide shielding external to the structure. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.... Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See also *In re Sneed*, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983). It is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”; and *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973). Combining the teachings of references does not involve an ability to combine their specific structures. Thus, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, prior arts must be considered in entirety, including discloses that teach away from the claims, MPEP § 2143.01-02.

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14. On page 12, last paragraph and page 13, applicant argues that applicant intends to solve a different problem (see page 12, last 3 lines). It is not necessary in order to establish a prima facie case of obviousness that there be a suggestion or expectation from the prior art that the claimed invention will have the same or a similar utility as one newly discovered by the applicant *In re Dillon*, 919 F.2d at 692, 16 USPQ2d at 1900. Thus, it is not necessary that the prior art suggest the combination to achieve the same advantage or results discovered by applicant. See MPEP § 2144.

15. In response to applicant's argument that there is no suggestion to combine the references (see page 13, last two paragraphs), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the ordinary artisan would have been motivated to modify Orcutt for at least the purpose of providing protection to certain portions of the chip from incident light of the specific wavelengths that the device is expected to be exposed to.

16. In response to applicant's argument that Orcutt and Zhang is nonanalogous art (see page 13, last paragraph and page 14, 1<sup>st</sup> paragraph) or that Kobachi is nonanalogous art (see arguments on pages 16-17 related to claim 10), it has been held

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that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both Zhang and Orcutt are semiconductor structure and both are concerned with shielding semiconductor structures from radiation. Given that the claimed invention is also related to shielding of semiconductor structures against radiation, both Orcutt and Zhang are analogous art.]

17. The arguments presented with respect to claim 20 on page 14 and other arguments presented on pages 15-18 are similar to the arguments that have already been addressed above.

### ***Conclusion***

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AJAY K. ARORA whose telephone number is (571)272-8347. The examiner can normally be reached on Mon through Fri, 8am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thao X. Le can be reached on (571) 272-1708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. K. A./  
Examiner, Art Unit 2892

/Thao X Le/  
Supervisory Patent Examiner, Art  
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